

Application No. 10/591,622  
Amendment Dated December 27, 2011  
Reply to Office Action Dated September 27, 2011

**Amendments to the Claims:**

This listing of claims will replace all prior versions and listings of claims in the application:

**Listing of Claims:**

1. (currently amended) An electric field control material including a polymer matrix in which is dispersed a non-linear filler having non-linear electric resistance properties, wherein the non-linear filler homogenously dispersed in the polymer matrix, and wherein the non-linear filler includes at least 97% by weight of zinc oxide as a homogeneous powder, and less than 3% by weight of at least one metal oxide as traces.
2. (previously presented) The material according to claim 1, wherein the non-linear filler includes less than 99.8% by weight of the zinc oxide as a homogenous powder.
3. (previously presented) The material according to claim 1, wherein the grains composing the zinc oxide powder of the non-linear filler have dimensions in majority less than 50  $\mu\text{m}$ .
4. (previously presented) The material according to claim 1, wherein said metal oxide is lead oxide.

5. (previously presented) The material according to claim 1, wherein the zinc oxide of the non-linear filler is doped with at least one non-metal element.

6. (previously presented) The material according to claim 5, wherein each non-metal element is sulphur or boron.

7. (previously presented) The material according to claim 1, further comprising a linear filler having linear electric resistance properties.

8. (previously presented) The material according to claim 7, wherein the volume of the linear filler accounts for less than 25% of the volume of the non-linear filler.

9. (previously presented) The material according to claim 1, further comprising an insulating filler.

10. (previously presented) The material according to claim 9, wherein the insulating filler accounts for less than 10% by volume of said material.

11. (previously presented) The material according to claim 7, wherein the non-linear or the combination of the non-linear and the linear filler volume substantially accounts for 5 to 60% of the volume of said material.

12. (previously presented) The material according to claim 1, wherein the zinc oxide has a direct current resistivity which is less than  $10^9 \Omega.m$ .

13. (previously presented) A termination for an electric cable, wherein it includes at least one electric field distributor element, including a material according to claim 1.

14. (previously presented) A connecting device for electrical cables, wherein it includes at least one electric field distributor element including a material according to claim 1.

15. (previously presented) A current limiting device, wherein it includes at least one PTC effect element, including a material according to claim 1.

16. (previously presented) A power cable, wherein it includes at least one electric field distributor element including a material according to claim 1.

17. (previously presented) Self-regulating heating cable, wherein it includes at least one PTC effect heating element including a material according to claim 1.

18. (previously presented) The material according to claim 3, wherein the grains

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composing the zinc oxide powder of the non-linear filler have dimensions in majority less than 10  $\mu\text{m}$ .

19. (previously presented) The material according to claim 11, wherein the non-linear or the combination of the non-linear and the linear filler volume substantially accounts for 15 to 40% of the volume of said material.

20. (previously presented) The material according to claim 12, wherein the zinc oxide has a direct current resistivity which is less than  $10^8 \Omega\cdot\text{m}$ .

21. (previously presented) The material according to claim 1, wherein the electric field control material is a non-linear material.

22. (new) The material according to claim 1, wherein the non-linear filler is a filler composed of micro-particles.

23. (new) The material according to claim 1, wherein the non-linear filler is a filler composed of particles with an average diameter superior to 1  $\mu\text{m}$ .